

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF THE CLAIMS:

Claim 1 : (Currently Amended) A bar code symbology, comprising: a set of symbols including characters having patterns of bars and spaces, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space being limited to k modules in width, each symbol having a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable and recognizable by a decoder as a portion of a respective symbol, the graphic element having an arrowhead shape pointing in a scan direction lengthwise of the respective symbol and constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

Claim 2 : (Original) The symbology as defined in claim 1, wherein the graphic element is a fixed width pattern of bars and spaces, with bars of different height.

Claim 3 : (Original) The symbology as defined in claim 1, wherein the graphic element uses fixed ratios of bar/space combinations.

Claim 4 : (Original) The symbology as defined in claim 1, wherein the graphic element includes an area of white space used by a decode algorithm.

Claim 5 : (Original) The symbology as defined in claim 4, wherein the area of white space has a fixed width.

Claim 6 : (Original) The symbology as defined in claim 4, further comprising a predetermined start pattern and a predetermined stop pattern.

Claim 7 : (Original) The symbology as defined in claim 1, wherein n is equal to p .

Claim 8 : (Original) The symbology as defined in claim 7, wherein the largest single bar or space pattern is limited to four modules in width.

Claim 9 : (Original) The symbology as defined in claim 8, wherein n is equal to three, and each character spans a distance of 11 modules.

Claim 10 : (Original) The symbology as defined in claim 6, wherein the symbology excludes from valid patterns a pair of patterns that Code 128 uses as a stop pattern.

Claim 11 : (Original) The symbology as defined in claim 10, wherein the symbology excludes from valid patterns three Code 128 start patterns except for check characters adjacent the predetermined stop pattern.

Claim 12 : (Currently Amended) An information-bearing machine-readable carrier, comprising:

a substrate; and

a symbol having characters and patterns of bars and spaces on the substrate, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in a character being limited to k modules in width, the symbol having a predetermined start pattern and a human recognizable graphic element provided

among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable and recognizable by a decoder as a portion of a respective symbol, the graphic element having an arrowhead shape pointing in a scan direction lengthwise of the respective symbol and constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

Claim 13 : (Currently Amended) An apparatus, comprising:

an imager for obtaining image data of a target in an image field, the target including a symbol having characters and patterns of bars and spaces, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in a character being limited to k modules in width, the symbol having a predetermined start pattern, a predetermined stop pattern, and a human recognizable graphic element having an arrowhead shape pointing in a scan direction lengthwise of the symbol and provided among the patterns of bars and spaces, at least a portion of the graphic element being machine readable; and

a decoder for recognizing the portion of the graphic element as a portion of the symbol, and for processing the image data to derive information contained in the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

Claim 14 : (Currently Amended) An apparatus for generating a signal representative of information encoded in a machine-readable symbol, the apparatus comprising:

a) a scanner for scanning a single row of encoded characters of the symbol with light for reflection therefrom, each character representing an item of data and being selected from a set of detectable mark/space patterns, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in each character being limited to k modules in width, the symbol having a human recognizable graphic element having an arrowhead shape pointing in a scan direction lengthwise of the symbol and provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable;

b) a detector for detecting at least a portion of light reflected from the symbol, and for generating an electrical signal indicative of the detected light; and

c) a decoder for recognizing from the electrical signal the portion of the graphic element as a portion of the symbol, and for decoding the electrical signal to obtain a plurality of corresponding data values representative of the information contained in the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

Claim 15 : (Currently Amended) A method of decoding a bar code symbology that stores computer-executable instructions on a computer-readable medium, comprising the steps of:

acquiring data from an electro-optical scan of a bar code symbol having said symbology by scanning a single row of encoded characters of the symbol with light for reflection therefrom, each character representing an item of data and being selected from a set of detectable mark/space patterns, each character spanning a distance of m module widths and being represented

by n bars and p interleaved spaces, the largest single bar or space in each character being limited to k modules in width, the symbol having a human recognizable graphic element having an arrowhead shape pointing in a scan direction lengthwise of the symbol and provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable; and

decoding the scanned characters according to a symbology definition by recognizing the portion of the graphic element as a portion of the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

Claim 16 : (Currently Amended) An apparatus, comprising:

means for producing a representation of a symbol having characters formed from patterns of bars and spaces, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in each character being limited to k modules in width, the symbol having a predetermined start pattern, a predetermined stop pattern, and a human recognizable graphic element having an arrowhead shape pointing in a scan direction lengthwise of the symbol and provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable and recognizable by a decoder as a portion of the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol; and

means for printing the representation on a substrate.